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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,601	11/01/2001	Ulrike Rohr	2000DE135	8200
25255	7590	04/07/2004	EXAMINER	
CLARIANT CORPORATION INTELLECTUAL PROPERTY DEPARTMENT 4000 MONROE ROAD CHARLOTTE, NC 28205			RODEE, CHRISTOPHER D	
			ART UNIT	PAPER NUMBER
			1756	

DATE MAILED: 04/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/004,601

Applicant(s)

ROHR ET AL.

Examiner

Christopher D RoDee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 February 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 and 18-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 and 18-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of electrophotographic toners and developers as the elected species in Paper No. 7 is acknowledged. In the election, the toner is further defined as a dry toner and the pigment is an azo pigment.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Handbook of Imaging Materials* to Diamond, pp. 162-171 & 193-197 in view of Pollard in US Patent 4,173,492 further in view of JP 3-168760.

This rejection was presented in the last Office action. Applicants have amended this toner claim because of its dependence in product-by-process form on claim 1. Applicants stress in the recent remarks that the references in combination do not disclose spherically shaped wax coated pigment particles in the claimed process of making the toner.

The Examiner has carefully considered applicant's remarks but must stress that the product produced by the claimed process appears to have the same structure and composition as is present in the combination of references. Applicants are reminded that it is the product that is being claimed and not the method of making the product, in this case the toner. Applicants have not specified why the toner is different in the prior art as opposed to the claims.

It appears to the Examiner that during the grinding step the wax coated pigment particles will be broken apart in order to arrive at particles having a toner size (e.g., 4 to 25 μm ; see ¶ [0103]). Consequently, the wax coated pigment particles must be broken apart during the toner manufacturing process. There is no indication in the evidence of record that the shape of these broken apart wax coated pigment particles dispersed in the binder resin of the toner will be different from the wax particle shape present in the toner suggested by the combined references. Lacking another reasons for traversal the combination of references is seen as providing a *prima facie* case of obviousness for the toner. The rejection is therefore maintained.

Claims 1-10, 12-16, and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Handbook of Imaging Materials* to Diamond, pp. 162-171 & 193-197 in view of EP 1081195 further in view of JP 3-168760, and still further in view of Metz *et al.* in US Patent 6,485,558. Metz is relied upon as providing an English translation of the applied EP reference because it is derived from the same priority document. Claim 4 is newly rejected over art based upon the disclosure of the EP document of azomethine pigments.

Diamond discloses the conventional process of producing a toner. Diamond states that pigment and additive dispersion in the binder resin can strongly influence the quality of the resultant toner images (p. 193, § 4.6.1). The process includes melt mixing pigment and internal additives with the base toner polymer, breaking the pigmented polymer into particles of approximately the desired size, removing unwanted sizes, and blending external additives (p. 193). Specific melt mixing process features are discussed on p. 194, § 4.6.2. The aim of melt mixing is to obtain dispersions closely approximately perfectly distributed ingredients (p. 194). Premixing of the ingredients before melt mixing is possible. Once the particles are melt mixed they are extruded to as pellets to a size of about 100 μm (p. 195, § 4.6.3), followed by attrition

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and classification to obtain the desired toner particle size. Diamond, as discussed above, discloses that binder resins are chosen so that they melt upon heating. This would suggest a thermoplastic resin to the artisan because thermoplastic resins soften and melt upon heating. Specific examples of the binder resin are disclosed by Diamond. Diamond also discusses typical adjuvants for the toner including charge control agents (p. 149, § 4.2.3), such as ammonium compounds, and pigment colorants (p. 194, § 4.2.2), such as azo pigments (p. 169, top). Typical colorant loadings are 5 to 15 % by weight.

The reference does not disclose the spherically shaped wax-coated pigments of the instant claims.

The EP document, as seen in the corresponding US Patent, discloses the use of spherical wax coated pigment granules to color high molecular weight organic materials, such as polymers (col. 4, l. 58 - col. 5, l. 18; Example 8; patent claim 16). These wax coated pigments have sizes of from 0.05 to 5 mm (col. 2, l. 23-29) and have from 1 to 50 weight percent of the wax (col. 3, l. 30-34). Useful pigments include azo pigments (col. 2, l. 31-37) and useful waxes, which are spray dried onto the pigment, include natural wax and synthetic wax (col. 2, l. 38-65). The wax coated pigments are disclosed as readily dispersible in the polymer and that they reduce dusting (col. 1, l. 6-15, l. 53-56). Alternatively, the wax can be add to monomers and colorant followed by polymerizing the monomers to form the polymeric material.

The JP reference teaches a specific embodiment where a wax coated coloring agent powder is added to a binder resin. The wax coating on the coloring agent reduces bleeding out of the coloring agent from the binder resin (Abstract). A toner having the binder resin and the wax-coated is produced by melt kneading the binder resin and the wax coated coloring agent powder followed by pulverizing.

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a spherically shaped wax-coated pigment as the colorant in preparation of the conventional toner as discussed by Diamond because Diamond and the JP teaches that dispersion of the colorant in the binder resin is an important feature in toner manufacture and the EP document (as seen in Metz) teaches that wax-coated pigments are readily dispersed in polymers. The artisan would recognize that Diamond and the EP document are concerned with similar problems and are, therefore, related art. The artisan would use and optimize those pigment sizes as well as pigment and wax compounding amounts suggested by the EP document in order to obtain the benefits of dispersing pigment into a polymer with proper coloring. The artisan would also have found it obvious to add the spherical wax coated pigment to monomers followed by polymerization and extrusion, attrition, and classification as discussed by Diamond because the EP document discloses the specific polymerization process as effective to place the colorant in the polymer and the artisan would recognize that this results in the same composition (i.e., pigment in polymer) as the melt mixing process disclosed by Diamond. These processes would have been seen as obvious alternatives to the skilled artisan as they arrive at the same intermediate product. The JP document also would have made obvious the use of melt kneading of the colorant into the binder resin based on its disclosure of wax coated colorant in a binder resin.

Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Handbook of Imaging Materials* to Diamond, pp. 162-171 & 193-197 in view of EP 1081195 further in view of JP 3-168760, and still further in view of Metz *et al.* in US Patent 6,485,558 as applied to claims 1-10, 12-16, and 18-21 above, and further in view of Macholdt *et al.* in US Patent 6,159,649.

Diamond, the EP document, Metz, and the JP document were described above.

Diamond does not disclose the non-ammonium charge control agents of the instant claims and does not specify the amount of the charge control agent in the toner.

Macholdt teaches various charge control agents that are effective with azo pigment containing toners. These include triphenylmethanes; ammonium and iminium compounds (immonium compounds); fluorinated ammonium and iminium compounds; biscationic acid amides; polymeric ammonium compounds; diallyl-ammonium compounds; aryl sulfide derivatives; phenol derivatives; phosphonium compounds and fluorinated phosphonium compounds; calix(n)arenes; cyclically linked oligosaccharides (cyclodextrins); polyester salts; metal complex compounds, especially salicylate-metal and salicylate-nonmetal complexes and -hydroxy carboxylic acid-metal and -nonmetal complexes; benzimidazolones; azines, thiazines or oxazines, and those specified in column 7, line 61 - column 16, line 8. The amount of the toner in the charge control agent is preferably 0.1 to 5 % by weight of the toner (col. 15, l. 11-18, l. 32-41).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use one of the known charge control additives of Macholdt in the amounts suggested in the invention of Diamond because Diamond suggests that charge control additives be added to the toner to adjust the rate and magnitude of charge and Macholdt discloses specific charge control agents for this purpose.

Conclusion

The previously presented grounds of rejection, not repeated here, are withdrawn based upon applicant's claim amendments. The new grounds of rejection relying on the EP document fully respond to applicant's remarks and the amendments to the claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher D RoDee whose telephone number is 571-272-1388. The examiner can normally be reached on most weekdays from 6 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cdr
1 April 2004


CHRISTOPHER RODEE
PRIMARY EXAMINER